## Instructions and Guidelines for Developing a Research Need Statement (RNS)

**Introduction:** The primary function of the Research and Development Unit is to work with NCDOT business units to initiate contract research that addresses issues facing North Carolina's transportation community. Ideas and proposals are also accepted from University partners as they may have a novel approach to a transportation related issue. Most of NCDOT's research is applied research: Research that is intended to solve a specific problem or set of problems. Potential projects include, but are not limited to: new or revised specifications, new or revised design guides, new or updated performance or traffic models, safety studies, material testing, economic impact studies, environmental studies and revised policies.

➔ ***Nearly all operational, policy and design areas of NCDOT are eligible for research funding.***

The Research Need Statement serves as the framework on which to build Preliminary and Full Proposals. While preparing a Research Need Statement and Preliminary Proposal, you are encouraged to communicate with NCDOT research staff and key business units at NCDOT in order to better define the topic and proposed research. *No commitment for funding can be made or should be implied from acceptance of an RNS and Preliminary Proposal.* Research Need Statements submitted by NCDOT personnel will be advertised and distributed to all eligible researchers.

***Research proposals are funded on a competitive basis based on Departmental need, urgency and available funding.***

**Project Duration:** Research projects typically vary in length between 6 months and 3 years, with 2 years the most common period. Proposals received from potential researchers shall include their best estimate of a schedule based on the complexity and needs of the proposed project. **Synthesis projects,** for which a researcher compiles knowledge and best practices to produce a guidance document typically have a maximum 1 year duration.

**Please note that all fields on the form will expand as needed. Take as much space as required to complete each portion, but try to be concise and clear and limit the RNS length to 2 pages.**

**Contact Information:** Please fill in all appropriate contact information. This information will be used in the Research and Development database and will provide a way for R&D or a business unit to contact you further.

**Title:** The title of the RNS should be a few words describing the idea. Concise is best, but be specific.

**Problem or Issue Needing Investigation:** This field should be used to broadly outline the scope of the problem. Is a new specification needed? Does a new intersection design require investigation for safety and efficiency before being placed in wide use? Is material durability in question for certain applications? Is increased knowledge in a particular area needed?

When preparing the statement, you should identify the specific problem to be addressed by the research and think about the questions of How?, What?, and Why?.

Conduct a preliminary research or literature review on the topic in current periodicals and journals to see what research has already been conducted and if it meets your needs. The results should be included in the preliminary proposal, but a brief reference is appropriate in the RNS document. One of the best sources of existing research is the TRB Database, TRID: http://trid.trb.org/

**Background**: Please provide a brief background statement describing events, procedures, experiences and/or processes leading up to your idea. Providing sufficient background in non-technical language (without unneeded jargon) will help reviewers understand the importance of the problem.

**Research Tasks:** This should be a basic list of what is *likely* to be required as part of this research (with less detail than the preliminary proposal).

**Products of the Research:** Research products are deliverables associated with the research that will be used for implementation and integration of the results into departmental processes, policies, standards, and practices. This is not simply a final report document. Examples might be the development of manuals, protocols, improved processes, new products, new procedures, increased general practice knowledge, improved current practices, validated or improved models, developed guidelines, developed methodologies, updated design criteria, project prioritization methods, inputs for analysis systems, identification of additional resources needed, training manuals and courses, cost-benefit analyses, improved testing methods, etc.

**Benefit to the Department / Explain Anticipated Benefits:** This section includes a set of check boxes to capture the general area of benefit. In the explanation box, please provide additional details the benefits of the research. Each customer of the research program has a different set of needs, and for this reason, each end-user and stakeholder may have a different way of evaluating the benefits of a research project. Examples of benefits include: cost or time savings for the agency or the public, efficiency improvements, improved accuracy of models or design methods, validation of a design, material or technique, etc.

**Implementation:** Implementation is a key component of the NCDOT research program. By describing potential implementation measures, NCDOT personnel are able to move research from the lab and computer screen to the field and design office. *It is not expected that a detailed implementation plan can be developed at this early stage in the research process, but research ideas should be developed with the goal of production usage in mind.* Please describe any general concepts for implementation and designate the unit, position title and name that will oversee placing this research into practice. Be sure to include any potential issues/barriers to project implementation here.

**NCDOT Project Sponsor:** Please complete this field. Projects with an internal champion stand a much greater chance of being funded and of being successful.

**Additional Comments and Information:** Include any additional information you think is relevant to the proposal. Key information could include units and personnel that were consulted during the development of the RNS and any additional business units that would be involved in implementation.

**A Note on Contact with NCDOT Personnel:**
Prospective researchers are encouraged to contact NCDOT technical and business experts when developing an RNS and Preliminary Proposal. Phone calls, emails and visits are appropriate to better define and gain support for a topic. Remember: *NCDOT cannot make any statement regarding awarding of work.* Discussions should focus on technical and practical issues. Cost should not be discussed at this time. All research proposals will be evaluated by the research subcommittees and final approval will be made by the Research Executive Committee.

**Assistance:**
For additional information or clarification, contact any of the Research and Development staff listed below.

**For questions or comments, please contact any of the following:**

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